SMALL DEPRESSION POCOSIN (TYPIC SUBTYPE)

Concept: Small Depression Pocosins are shrubby wetlands of small basins that have shallow and short-lived surface flooding, with dense shrub layers of species shared with Peatland Pocosin communities. They either have no tree canopy or have an open canopy with characteristic pocosin tree species such as *Pinus serotina*, *Magnolia virginiana*, and *Persea palustris*. They are conceptually transitional between the Coastal Plain Depression Swamps and Peatland Pocosins themes. The Typic Subtype encompasses communities where the shrub layer is dominated by the most typical pocosin shrubs, generally *Cyrilla racemiflora, Lyonia lucida, Ilex coricea, Ilex glabra*, and *Smilax laurifolia*. *Vaccinium* spp. often are present but do not dominate in this subtype.

Distinguishing Features: Small Depression Pocosins are distinguished from most other depressional wetlands by the presence of a dense shrub layer that fills all or most of the basin. Swamp trees such as *Taxodium ascendens* and *Nyssa biflora* may be present, even abundant, but *Pinus serotina, Magnolia virginiana*, and *Persea palustris* are more typically dominant if there is a canopy. Small Depression Shrub Border occurrences may share many species but occur as a narrow band on the edge of a deeper depression. They are more subject to fluctuating water levels and are exposed to natural edge effects from more open vegetation on both sides. Several species are often present in Small Depression Shrub Borders but not often in Small Depression Pocosins, including *Ilex myrtifolia, Ilex cassine*, and *Litsea aestivalis*, as well as *Hymenachne hemitomon* and other species of more open pond communities.

Small Depression Pocosins are distinguished from Peatland Pocosin and Streamhead Pocosin communities by occurring in small closed basins where water is ponded at times. Small Depression Pocosins have a number of species that are scarce or absent in other communities called pocosins, including *Vaccinium* spp., *Nyssa biflora, Pinus taeda, Taxodium ascendens*, and other species more associated with ponds. There is not a defined size limit for Small Depression Pocosins, but few examples are more than 10 acres and most are much smaller.

The Typic Subtype is distinguished from the Blueberry Subtype by the dominance of characteristic pocosin species such as *Cyrilla racemiflora, Lyonia lucida, Ilex coriacea, Ilex glabra*, and *Smilax laurifolia*, with only a small minority presence of *Vaccinium* spp.

It can be difficult to distinguish natural Small Depression Pocosin communities from successional vegetation that can invade open depressional wetlands with drought and exclusion of fire. *Liquidambar styraciflua* is one species that is seldom, if ever, found in true Small Depression Pocosins. Dominant *Pinus taeda* or *Acer rubrum* and weedy herbaceous species may also suggest alteration. However, they may increase in disturbed and fire-suppressed Small Depression Pocosins as readily as in open communities and do not definitively indicate a former open community. The context can also be an important clue; Small Depression Pocosins are likely to be similarly or less altered than the surrounding communities, rather than more altered. The presence of relict species from the open community can also be a clue. Historical accounts or photographs showing nonwoody vegetation, if not taken at a time of artificial clearing, may be crucial for confidence.

Synonyms: *Pinus serotina / Cyrilla racemiflora - Lyonia lucida - Vaccinium fuscatum* Woodland (CEGL004434).
Ecological Systems: Southern Atlantic Coastal Plain Depression Pondshore (CES203.262).

Sites: Small Depression Pocosins usually occur in shallow limesinks, less often in relict dune swales or small Carolina bays.

Soils: Soils have a shallow to deep organic surface layer. Most occurrences are smaller than the minimum map unit for soil surveys and are included in the surrounding upland soil units. A few are mapped as Murville or Lynn Haven (Typic Haplaquods) or Torhunta (Typic Humaquept).

Hydrology: Surface water is shallow and seldom persists far into the growing season. Saturation may persist for much of the year. Some Small Depression Pocosins have small, deeper pools that hold water longer.

Vegetation: The vegetation is a dense shrubland with a variable density of trees. The shrub layer is a mix of species without strong dominance. In CVS plot data and site descriptions, *Cyrilla racemiflora, Lyonia lucida, Persea palustris,* and *Vaccinium formosum* are usually present with high cover, while *Ilex coriacea, Arundinaria tecta*, and in the southern part of the state, *Ilex myrtifolia* can have high cover in some examples. *Magnolia virginiana, Vaccinium fuscatum,* and *Aronia arbutifolia* are frequent but with lower cover, and *Clethra alnifolia, Viburnum nudum*, and *Eubotrys racemosa* are also fairly frequent. *Litsea aestivalis* and *Zenobia pulverulenta* have been found occasionally. *Smilax laurifolia* is frequent and may be dense. *Smilax rotundifolia, Smilax glauca*, and *Muscadinia rotundifolia* also often are present. Trees are variable in cover and species. *Pinus serotina* is highly constant, but *Nyssa biflora*, *Pinus taeda*, and *Acer rubrum* also are often found. A few have *Taxodium ascendens* or *Chamaecyparis thyoides*. Herbs are generally sparse, with the exception that *Sphagnum* sp. may form substantial mats and *Anchistea virginica* may have moderate cover. The outer edge of the community, where it borders longleaf pine communities, can have diverse ecotonal vegetation with species typical of wetter longleaf pine communities such as Sandy Pine Savanna. The interior of the community may have a small opening where water is the deepest, and species of Small Depression Drawdown Meadow or Depression Pond may be present in small numbers.

Range and Abundance: Ranked G2G3. The synonymized association is attributed only to North Carolina and South Carolina, though related communities must occur in much of the Coastal Plain. The abundance of this community is less certain than most. Example are often overlooked in site surveys and plot sampling alike, and they may be lumped if larger pocosin are nearby.
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Associations and Patterns: Small Depression Pocosins usually fill entire small basins, though rarely they may occupy half a basin. They often occur in complexes with other Coastal Plain Depression Communities in limesink clusters or relict dune systems and are usually set in a matrix of Wet or Dry Longleaf Pine Communities.

Variation: Three weakly marked variants are recognized to encourage further study:
1. Pocosin Variant consists largely of species typical of Pond Pine Woodland and High Pocosin, perhaps containing *Vaccinium fuscatum* or *Acer rubrum* var. *trilobum* but lacking “pond” species.

This variant is most closely related to Peatland Pocosins, It is known from the middle outer Coastal Plain and inland areas.
2. Swamp Variant has a typical shrub layer but has a *Pinus taeda, Nyssa biflora, Acer rubrum* var. *trilobum,* or *Taxodium ascendens* rather than *Pinus serotina* as the primary tree component. It appears transitional to Small Depression Swamp forest. Occurrences are widespread in the Coastal Plain.
3. Pond Variant contains shrub species typical of wetter, more open small depressions, such as *Ilex myrtifolia, Litsea aestivalis,* and *Ilex cassine,* in addition to pocosin shrubs. It thus shows a relationship with Small Depression Drawdown Meadow. This variant is known only in the southern Outer Coastal Plain in the state.

Dynamics: Dynamics of Small Depression Pocosins are not well known. Like true pocosins, they may burn if fires occur in surrounding vegetation when they are dry. Fires may be mild surface fires that have limited effect or may be catastrophic fires that carry through the shrubs and top-kill all woody vegetation. Fires may more often merely scorch the shrubs on the edges without penetrating the interior.

The ecological processes that create and maintain the distinction between these communities and other Coastal Plain Depression Communities are poorly known. They may result from gradual accumulation of organic matter that reduced water depth, perhaps during the Pleistocene. Organic matter may also keep the soil saturated and reduce drying during drawdown periods, favoring pocosin species. However, it is interesting that they often occur in close proximity to other depression wetlands in limesink complexes or dune systems, suggesting that some range of basin characteristics led them to develop differently.

Shrub-dominated basins are often believed to result from succession in more open wetlands. Belief that most Small Depression Pocosins have developed quickly as a result of modern fire suppression is not compelling. Open wetlands that are known to have become dense recently tend to be dominated by *Acer rubrum*, *Liquidambar styraciflua*, and other species not characteristic of pocosins. Many typical examples of Small Depression Pocosins have more open basins nearby with similar fire histories. However, this question warrants further investigation. The presence of species more typical of other depression communities, interpreted as an indication of their relationships, could be relict species from a past state of vegetation.

Comments: The name and theme placement of Small Depression Pocosins indicates their marginal or intermediate character. They share dominance by the suite of woody species characteristic of all pocosins. At the same time, they have a number of additional species shared with other communities, as well as a distinctive environment. Differences in invertebrate communities are not known but may be stronger.

The boundary between Small Depression Pocosins and Peatland Pocosins needs more investigation. Larger peat-filled Carolina bays support pocosin vegetation that is indistinguishable from domed peatlands. They do not tend to contain surface water beyond local puddles, apparently because peat has accumulated above the level where water would pond. Pond Pine Woodland occurs in shallow swales of relict dune topography. These areas too do not tend to contain standing water, and it appears that organic matter, though shallow, has accumulated to the level of the

seasonal high water table. The basins where Small Depression Pocosin occurs are smaller and steeper. They do not have such deep organic deposits and are visibly lower than the surrounding land, with room for water to sit on the surface.

Rare species: Rare species associated with Small Depression Pocosins generally occur only on the margin, in the ecotone with adjacent communities. *Lysimachia asperilifolia*, *Drosera filiformis*, or other species of savanna-pocosin ecotones may occasionally be found. *Litsea aestivalis* and *Ilex amelanchier*, species of other Coastal Plain Depression Communities, have been found occasionally.

References: